

REMARKS

I. INTRODUCTION

Claims 39, 41-50 and 52-60 are currently pending. The Examiner has rejected claims 39, 41-50 and 52-60 under 35 U.S.C. § 112, first paragraph, and has rejected claims 39 and 50 under 35 U.S.C. § 102(b). In view of the following representations, allowance of this application is most respectfully requested.

II. REJECTION UNDER 35 U.S.C. § 112, ¶1, ENABLEMENT

Claims 39, 41-50 and 52-60 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. In explanation of the rejection, the Examiner states:

The present claims require two materials having specified relationships between various properties of the materials. There are numerous specific materials from which these two materials can potentially be selected. One of ordinary skill in the art at the time of the invention would be guided by the specific materials disclosed in the specification with the expectation that at least some of those materials would provide combinations meeting the specified relationships. Data of record show that at least some of the exemplary combinations do not meet the claim limitations although teachings of the specification suggest that they do, and the disclosure provides no specific example that clearly meets all the limitations with respect to the specified relationships between the various properties. Given the large number of materials from which the two materials can potentially be selected, and given the lack of guidance with respect to any specific combinations of materials that actually meet the required relationships, the examiner maintains the position that the present claims are not enabled.

Office Action dated April 30, 2008, page 3. Applicants respectfully disagree with the Examiner's position. For the reasons set forth in detail below, Applicants respectfully submit that the claims fully comply with the enablement requirement of section 112 and request that this rejection be withdrawn.

The test for enablement is whether a person skilled in the art could make and use the invention as claimed without undue experimentation. *United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) (“The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.”). The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. *In re Certain Limited-Charge Cell Culture Microcarriers*, 221 USPQ 1165, 1174 (Int'l Trade Commission 1983), *aff'd. sub nom., Massachusetts Institute of Technology v. A.B. Fortia*, 774 F.2d 1104, 227 USPQ 428 (Fed. Cir. 1985). *See also In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404. A specification disclosure which contains a teaching of the manner and process of making and using an invention in terms which correspond in scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement requirement of 35 U.S.C. §112, first paragraph. MPEP § 2164.01.

The present invention relates to organic light emitting devices having increased efficiency. The increased efficiency stems from the use of a phosphorescent dopant material that has a triplet energy that is less than the triplet energy of the host material and through “charge-trapping” on the phosphorescent dopant. Applicants provide a description of the criteria for charge trapping on the dopant material. See Specification at page 7, lines 1-10; page 7, line 15 – page 8, line 12; page 12, line 21 – page 13, line 2. Applicants also provide the method for the device fabrication. A person of ordinary skill in the art would be familiar with the techniques used to determine the HOMO, LUMO and triplet energies of a given material, as such measurements are routine in this field. Thus, the determination of the HOMO, LUMO and triplet energy of particular materials would not constitute undue experimentation.

The Examiner does not identify any limitation that allegedly lacks enablement. Rather, the Examiner relies on the fact that “data of record show that at least some of the exemplary combinations do not meet the claim limitations.” The Examiner bases the rejection on data showing that the combination of Ir(ppy)₃ with TAZ or BCP from certain Examples would not meet the claim limitation specifying that the LUMO of the emissive material be lower than the LUMO of the host material. Applicants respectfully submit that this does not indicate in any way that the present claims lack enablement. Applicants respectfully submit that an adequate basis for the rejection under 35 U.S.C. § 112, first paragraph, is not provided by the fact that certain embodiments disclosed in the application may not meet all of the recited claim elements, particularly when the methods for determination of the recited material properties and for fabrication of the recited devices were routine in the art.

In view of the above, Applicants respectfully submit that a person of ordinary skill in the art would be able to make and use the claimed devices without undue experimentation.

III. REJECTION UNDER 35 U.S.C. § 102(b)

The Examiner has rejected claims 39 and 50 under 35 U.S.C. § 102(b) as anticipated by Baldo et al. in *Nature* **1998**, 395, pp. 151-154. For the reasons set forth below, Applicants respectfully submit that Baldo et al. does not disclose, expressly or inherently, each limitation of the claims 39 or 50.

The Examiner relies on the values reported by Lamansky et al. (U.S. 2002/0182441) for the triplet energy of PtOEP and Alq₃ in an attempt to show that the relative triplet energies of the materials used in the Baldo device inherently meet the requirement of the present claims. The Examiner states that “[i]f under the same conditions, the triplet energy of the dopant material PtOEP is measured to be 1.9eV, and the triplet energy of the electron transporting host material Alq₃ is measured to be 2.0eV, it is not clear to the examiner why

this combination of materials would not be considered to meet the triplet energy state relationship required by present independent claims 39 and 50.”

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631; 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The fact that a certain result or characteristic *may* occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534; 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212; USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities.’” *In re Robertson*, 169 F.3d 743, 745, 49; USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Applicants respectfully submit that the values reported by Lamansky et al. (U.S. 2002/0182441), which are referred to by the Examiner, are not 1.9eV and 2.0eV, but rather are 1.9 ± 0.1 eV and 2.0 ± 0.1 eV. Within the experimental error, these reported triplet values can not be distinguished. In fact, considering the experimental error in these reported values, it is possible that the triplet energy of the PtOEP is greater than the triplet energy for the Alq₃.

Thus, Applicants respectfully submit that the combination of Alq₃ and PtOEP does not inherently meet the triplet energy relationship recited in the claims. The claims require that “the phosphorescent dopant material has a triplet excited state with a triplet state energy that is less than the triplet state energy of the lowest triplet excited state of the electron

transporting host material.” It is Applicants’ understanding that the triplet energy level of PtOEP is not less than the triplet energy level of Alq₃. Rather, within the limits of the measurement technique, the triplet energy for PtOEP and Alq₃ are the same. Thus, Applicants respectfully submit that Baldo et al. do not teach or suggest each limitation of claims 39 or 50, and respectfully request that the rejection be withdrawn.

IV. CONCLUSION

Applicants respectfully submit that the pending claims are in condition for allowance and request that such action be taken. If for any reason the Examiner believes that prosecution of this application would be advanced by contact with the Applicants’ attorney, the Examiner is invited to contact the undersigned at the telephone number below.

Respectfully submitted,
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